UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER
KERVEROS, JAMES C

ART UNIT	PAPER NUMBER
2138	

DATE MAILED: 11/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	10/829,509	TAYLOR ET AL.
	Examiner	Art Unit	
	JAMES C. KERVEROS	2138	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *15 September 2006*.

2a) ☒ This action is **FINAL**.   2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-28* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1,2,4-15 and 17-28* is/are rejected.

7) ☒ Claim(s) *3 and 16* is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☒ The drawing(s) filed on *22 April 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

        1.☐ Certified copies of the priority documents have been received.

        2.☐ Certified copies of the priority documents have been received in Application No. _____.

        3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

This is a FINAL Office Action in response to Amendment filed 9/15/2006.

Claims 1-28 were previously examined and still pending in the Application.

Objection to the Specification has been withdrawn in view of the amendment to

the abstract of the disclosure.

Response to Arguments

Applicant's arguments filed 9/15/2006 have been fully considered but they are

not persuasive.

In reference to independent claims 1, 14 and 28, Applicant argues, in contrast to

the claim invention, Berndt discloses establishing and displaying a failover data path but

not receiving a selection of a failover data path from the displayed logical failover circuit

as recited in claim 1. Furthermore, according to Applicant's arguments, Berndt does not

teach using a graphical user interface to receive a selection of a failover data path. In

response to Applicant's argument, claim 1 does not recite a "graphical user interface".

Instead, claim 1 broadly recites, "receiving a selection of a logical failover circuit from

the displayed at least one logical failover circuit, and rerouting the data from the failed

logical circuit to the selected logical failover circuit". According to Berndt, Figs. 4-5 show

Graphical User Interface (GUI) panels, which may be generated by application host 104

in Figs. 1-2.

A GUI, Fig. 4, graphically displays two source device icons 402a-402b

corresponding to interfaces 106a-106b and two target-device icons 404a-404b

corresponding to storage units 102a-102b with their associated data paths, respectively,

of Fig. 1. Thus, the two source-device icons 402a-402b correspond to Applicant's

claimed feature of "displayed at least one logical failover circuit".

In panel 500, Fig. 5, failed link 406a is graphically shown as a dashed line

connecting source device icon 402a and target device icon 404a. The failover data

path is graphically shown as a link 410 having a moving green portion 412. Therefore,

the source device icon 402a associated with the failed link 406a is replaced with the

source device icon 402b corresponding to the claimed "logical failover circuit", thus

meeting Applicant's limitation of "rerouting the data from the failed logical circuit to the

selected logical failover circuit".

Claims 1, 2, 4, 5, 7-28 are rejected over the prior art as set forth in the present

Office Action, below.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under
section 122(b), by another filed in the United States before the invention by the
applicant for patent or (2) a patent granted on an application for patent by
another filed in the United States before the invention by the applicant for patent,
except that an international application filed under the treaty defined in section
351(a) shall have the effects for purposes of this subsection of an application
filed in the United States only if the international application designated the
United States and was published under Article 21(2) of such treaty in the English
language.

Claims 1, 2, 4-6, 9, 14, 15, 17-19, 22,27 and 28 are rejected under 35

U.S.C. 102(e) as being anticipated by Berndt et al. (US Patent No. 7,027,053) filed:

February 28, 2002.

Regarding independent Claim 1, Berndt discloses a method for indicating a

failover data path, as shown in the flowchart of Figure 3, in a data network of Figure 1,

comprising:

In step 303, detecting a failure in the first data path between one source device

and one target device graphically displayed, in step 302, where the one source device

and the one target device are graphically displayed in a Graphical User Interface (GUI)

environment, in step 301,

In step 304, indicating graphically the failure in the first data path.

In step 305, displaying graphically a failover data path.

Rerouting the data from the failed logical circuit to the selected logical failover

circuit, as disclosed with respect to Figure 1, as follows: "In the event that the first data

path fails, a failover data path between application(s) 105 and storage devices 122a can

be established. In one embodiment, data that would normally be routed out of interface

106a to controller 110a is instead routed out of interface 106b to controller 110b and

then to UIC 116b. This data can then be transmitted via connection 150 to UIC

116a and then stored onto storage devices 122a".

Regarding independent Claim 14, Berndt discloses a system for indicating a

failover data path, as shown in the flowchart of Figure 3, in a data network of Figure 1,

comprising:

A network device (a display 212), such as a cathode ray tube (CRT) or liquid crystal display (LCD), for displaying information to a computer user, such as GUI panels 400, 500 of Figures 4 and 5, which may be generated by application host 104 in Figures 1-2. Berndt provide a graphical display to a user GUI to indicate the status of the multiple data paths and to further indicate the presence of a failover data path. The failover data path is graphically shown as a link 410 having a moving green portion 412. When implemented in storage system 100, link 410 corresponds to either connection 150 or connection 152 and therefore is shown directly connecting target device icon 404a with target device icon 404b.

A network management module corresponding to management host 124 in communication with display 212 and a user GUI, which enables a user to perform various management and monitoring tasks on storage system 100, as shown by the steps of the flowchart in Figure 3, below:

In step 303, detecting a failure in the first data path between one source device and one target device graphically displayed, in step 302, where the one source device and the one target device are graphically displayed in a Graphical User Interface (GUI) environment, in step 301,

In step 304, indicating graphically the failure in the first data path.

In step 305, displaying graphically a failover data path.

Rerouting the data from the failed logical circuit to the selected logical failover circuit, as disclosed with respect to Figure 1, as follows: "In the event that the first data path fails, a failover data path between application(s) 105 and storage devices 122a can

be established. In one embodiment, data that would normally be routed out of interface

106a to controller 110a is instead routed out of interface 106b to controller 110b and

then to UIC 116b. This data can then be transmitted via connection 150 to UIC

116a and then stored onto storage devices 122a".

Regarding independent Claim 28, Berndt discloses a computer system,

Figures 1 and 2, having a graphical user interface (GUI) Figures 4 and 5, including a

display 212 and a user interface selection device (input device 214) coupled to bus 202

and interfaces 106a-106b for communicating information and command selections, a

method for indicating a failover data path, as shown in the flowchart of Figure 3, in a

data network of Figure 1, comprising:

In step 303, detecting a failure in the first data path between one source device

and one target device graphically displayed, in step 302, where the one source device

and the one target device are graphically displayed in a Graphical User Interface (GUI)

environment, in step 301,

In step 304, indicating graphically the failure in the first data path.

In step 305, displaying graphically a failover data path.

Rerouting the data from the failed logical circuit to the selected logical failover

circuit, as disclosed with respect to Figure 1, as follows: "In the event that the first data

path fails, a failover data path between application(s) 105 and storage devices 122a can

be established. In one embodiment, data that would normally be routed out of interface

106a to controller 110a is instead routed out of interface 106b to controller 110b and

then to UIC 116b. This data can then be transmitted via connection 150 to UIC

116a and then stored onto storage devices 122a".

Regarding Claim 2, Berndt shows in Figure 5, an exemplary GUI panel 500 in which the failure in the first data path is graphically indicated. The failover data path is graphically shown as a link 410 having a moving green portion 412. When implemented in storage system 100, link 410 corresponds to either connection 150 or connection 152 and therefore is shown directly connecting target device icon 404a with target device icon 404b.

Regarding Claims 3, 16, Berndt discloses, in the Background of the Invention, "existing storage systems can monitor redundant data paths and automatically manage the failover to a redundant data path in the event of a failure. However, when a component in these storage systems fails, the system may lose its redundancy protection. Therefore, if the corresponding failover component subsequently fails and there are no other redundant components available, the entire system may fail". Furthermore, according to Berndt, some systems may record the failure in an error log, which may be easily accessible to the system operator. In this case, the claimed "threshold" corresponds to the redundant data paths available in the system.

Regarding Claims 4-6, 17-19, Berndt discloses a dedicated failover logical connection in a failover data network, corresponding to a failover data path between application(s) 105 and storage devices 122a, which is established in the event that the a data path fails. Berndt provide a graphical display to a user to indicate the status of the multiple data paths and to further indicate the presence of a failover data path. The failover data path is graphically shown as a link 410 having a moving green portion 412.

When implemented in storage system 100, link 410 corresponds to either connection 150 or connection 152 and therefore is shown directly connecting target device icon 404a with target device icon 404b.

Regarding Claims 9, 22, Berndt discloses dedicated failover logical connection, including a network-to-network interface, such as unit interconnect cards ("UIC") 116a and 16b, via connection 150, Figure 1.

Regarding Claim 15, Berndt discloses a remote access module, such as application host 104, for sending and receiving commands from the management host 124.

Regarding Claim 27, Berndt discloses a graphical display to a user GUI to indicate the status of the multiple data paths and to further indicate the presence of a failover data path. The failover data path is graphically shown as a link 410 having a moving green portion 412. When implemented in storage system 100, link 410 corresponds to either connection 150 or connection 152 and therefore is shown directly connecting target device icon 404a with target device icon 404b.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.

Patentability shall not be negatived by the manner in which the invention was made.

Claims 7, 8, 10-13, 20, 21 and 23-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Berndt et al. (US Patent No. 7,027,053) in view of Heeren et al. (US Patent No. 6,311,288).

Regarding Claims 7, 8, 10-13, 20, 21 and 23-26, Berndt does not explicitly disclose, a switched virtual circuit, in a frame relay network, which is asynchronous transfer mode (ATM) network. However, in analogous art, Heeren et al. (US 6,311,288) discloses a system and method for virtual circuit backup in a communication network, which includes a frame relay network 16 comprising a path of intermediate nodes defined by data link communication identifiers (DLCI's), commonly referred to as a permanent virtual circuit (PVC's), 19a, 19b, and 19c, which illustrate the concept of multiple communication paths within frame relay network 16. It would have been obvious to a person having ordinary skill in the art at the time the invention was made to implement a frame relay network as taught by Heeren, in the data network of the storage system Berndt, for the purpose of achieving high reliability of data transmission, due to the multiple communication paths deployed within the frame relay network, since it allows a single link to be backed up over multiple links. All circuits of a failed link need not be rerouted to the same backup link.

Allowable Subject Matter

Claims 3 and 16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: The prior arts of record taken alone or in combination fail to teach, anticipate, suggest or render obvious, determining whether a utilization of the selected logical failover circuit exceeds a threshold, if the utilization is less than the threshold, then rerouting the logical circuit data from the failed logical circuit to the selected logical failover circuit, if the utilization exceeds the threshold, then requesting the selection of an alternative logical failover circuit from the menu.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JAMES C. KERVEROS whose telephone number is (571) 272-3824. The examiner can normally be reached on 9:00 AM TO 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert Decady can be reached on (571) 272-3819. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JAMES C KERVEROS
Examiner
Date: 30 October 2006   Art Unit 2138
Office Action: Final
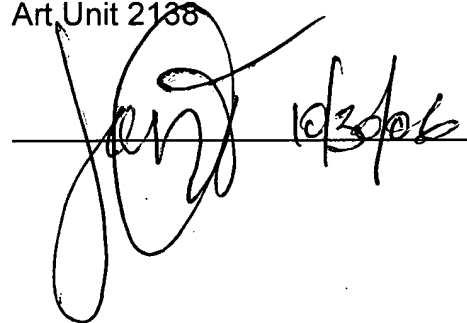
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